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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/802,482	03/09/2001	Stephan W. Wegerich	70480	2992

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EXAMINER

KIM, PAUL L

ART UNIT

PAPER NUMBER

2857

DATE MAILED: 06/26/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application N .

09/802,482

Applicant(s)

WEGERICH ET AL.

Examiner

Paul L Kim

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 March 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 March 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5,6,7.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Drawings

1. The drawings are objected to because figure 3 does not have a "prior art" label. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

The drawings are objected to under 37 CFR 1.83(a) because they fail to show X(0) and X(2) in figure 2 as described in the specification on page 9, line 24. Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

2. The disclosure is objected to because of the following informalities: On page 9, line 7, "generator 114" should read – generator 112 --.

Appropriate correction is required.

Claim Objections

3. Claims 9 and 19 are objected to because of the following informalities: In the second line of claim 9, "90o" should be – 90°--. In claim 19, the last line is difficult to

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understand, "...performs a sequential probability ratio the sequence". Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 1-23 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. With regard to claims 1, 11, 18, and 21, it is not understood what the term "lensing" means. Page 5 of the specification does not adequately describe the term.

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 1-23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. With regard to claims 1, 11, 18, and 21, the term "lensing" is indefinite. It is not clear exactly how it relates to a similarity function or similarity operator.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over McCown et al in view of Mahajan et al.

With regard to claim 1, McCown et al teaches a method and apparatus for monitoring system operation comprising: a data acquisition unit receiving data signals from sensors providing parametric snapshots of system operation (fig. 1, part 100 & col. 4, lines 6-14), a memory storing a training set containing system vectors (fig. 1, part 114), a processor receiving snapshots from the acquisition unit, comparing the data with system vectors from the memory (fig. 1, part 114 & fig. 3, step 202), and an output unit providing comparison results (fig. 18, parts 656 and 658).

McCown et al teaches comparing acquired data to stored system vectors but does not specify a similarity function being applied. Mahajan et al teaches that applying a similarity function to compare reference data to acquired data is well known in the art (col. 2, lines 16-21). It would have been obvious to one of ordinary skill in the art, at the time of the invention, to modify McCown et al so that a similarity function is used for data analysis, as taught by Mahajan et al, in order to select a reference vector that is closest in value to sensed data.

10. Claims 18-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wegerich et al in view of Mahajan et al.

With regard to claims 18, 20, and 21, Wegerich et al teaches an apparatus for monitoring a system comprising: a memory for storing a plurality of reference snapshots for parameters (col. 18, lines 1-2), an estimation engine to receive a snapshot of parameter values representing a condition of the system and generating a snapshot of at least one estimate of a parameter of the system (col. 18, lines 3-5), and a differencing engine for determining a difference between the estimated snapshot and the received snapshot and tests the difference against a threshold (col. 18, lines 6-10 & col. 9, lines 65+).

Wegerich et al teaches determining a difference between estimated and received snapshots but does not specify a similarity operator being applied. Mahajan et al teaches that applying a similarity operator to compare reference data to acquired data is well known in the art (col. 2, lines 16-21). It would have been obvious to one of ordinary skill in the art, at the time of the invention, to modify Wegerich et al so that a similarity operator is used for data analysis, as taught by Mahajan et al, in order to calculate a difference between the estimated and received snapshot with better accuracy.

With regard to claim 19, Wegerich et al teaches the differencing engine taking a difference of the estimated parameter and a corresponding parameter value from the snapshots to provide sequences of residual values and perform a sequential probability ratio (col. 10, lines 39-45).

All wabl Subj ct Matter

11. Claims 2-10, 22, and 23 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 11-17 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action.

The following is a statement of reasons for the indication of allowable subject matter: The prior art of record does not teach identifying minimum and maximum vectors within a training set.

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Keller teaches a system for identifying contaminants by using sensors and comparing sensor samples to a vector reference. Rajan et al teaches machine fault monitoring by recording sensor data and comparing data to a reference model.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul Kim whose telephone number is 703-305-7468. The examiner can normally be reached on Monday-Thursday 10:00-7:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marc Hoff can be reached on 703-308-1677. The fax phone numbers for

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the organization where this application or proceeding is assigned are 703-746-4440 for regular communications and for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

PK
June 14, 2003


MARC S. HOFF
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800